

BC-900-K1

DC-DC CONVERTER FOR BATTERY CHARGING



POSITIVE PROBLEM SOLVING **+ =**

This wall mounting DC-DC converter operates from a 24Vdc or 110Vdc input and provides an isolated and floating output, at a nominal 29½Vdc.

The unit has been designed to recharge and maintain 24Vdc batteries used in critical applications, where uncontrolled loss of output is not an option. The integrated battery management system ensures that the battery is maintained at its optimum levels thus providing the best life span possible.

- + Extended Operating Temperature Range**
- + Built in Battery Management System**
- + Monitoring & Control Software**
- + Volt Free Alarm Contacts**
- + Rugged Construction**
- + Convection Cooled**

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FURTHER DETAILS

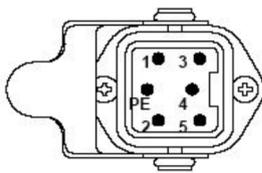
The unit monitors the converter temperature, DC_{OUT} UVP, DC_{OUT} OVP, Battery temperature sensor and system output. If any of these parameters are outside of the set values it will be signaled via the volt free relay contact. A windows based monitoring program is also available. This provides details of actual output values along with the preset thresholds. It also allows for the adjustment of the maximum output voltage and current limit along with the setting of thresholds. The units are protected to IP 54 and can operate in ambient temperatures of -40°C to + 70°C. The converters can be further ruggedised with the addition of conformal coating and the securing of the larger components. The units are suitable for many applications including rail, industrial and telecom.

SELECTION TABLE

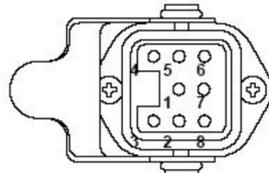
| Part Number | Input Voltage | Output Voltage | Output Current | Output Power |
|------------------|---------------|--------------------|-----------------------------|---------------------|
| BC-900-24-30-K1 | 24Vdc ± 30% | 29.5Vdc (10-30Vdc) | 30A _{MAX} (10-30A) | 900W _{MAX} |
| BC-900-110-30-K1 | 110Vdc ± 30% | 29.5Vdc (10-30Vdc) | 30A _{MAX} (10-30A) | 900W _{MAX} |

CONNECTION DATA

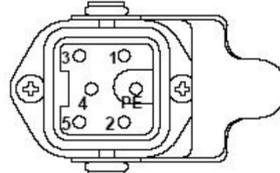
| INPUT -X1 | | SIGNAL -X2 | | OUTPUT -X3 | | SIGNAL -X4 | |
|-----------|--|------------|---|------------|---|------------|-----------------------|
| 1 | Input voltage reference 0V | 1 | Alarm common (C) | 1 | Output voltage reference 0V | 1 | N.C. |
| 2 | Input voltage reference 0V | 2 | Battery temperature sensor | 2 | Output voltage reference 0V | 2 | RD (RX) receive data |
| 3 | Input voltage positive + V _{IN} | 3 | Battery temperature sensor | 3 | Output voltage positive +24V _{OUT} | 3 | TD (TX) transmit data |
| 4 | N.C. | 4 | Remote ON/OFF pull up (for external relay: 5V/0.5mA) | 4 | N.C. | 4 | N.C. |
| 5 | Input voltage positive + V _{IN} | 5 | Remote ON/OFF reference (for external relay: 5V/0.5mA) | 5 | Output voltage positive +24V _{OUT} | 5 | GND logical ground |
| PE | Protective earth | 6 | Alarm normal open (NO, device off) | PE | Protective earth | 6 | N.C. |
| | | 7 | Alarm normal close (NC, device on) | | | 7 | N.C. |
| | | 8 | N.C. | | | 8 | N.C. |
| | | | | | | 9 | N.C. |



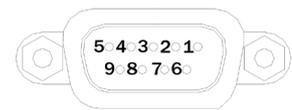
Input -X1
Harting HANQ5, male
Ag 2.5mm²



Signal -X2
Harting HAN8U, female
Au 1mm²



Output -X3
HANQ5, female
Ag 2.5mm²



Signal 2 -X4
D-SUB, female
9-pin

TECHNICAL DATA

| OUTPUT (BATTERY CHARGING) | |
|---|--|
| Nominal Voltage 29½VDC | Actual value dependant on temperature and charging characteristics (programmable) |
| Stability | ± 1% |
| Efficiency | >85% |
| Maximum Output Power | 900W |
| Output Current | 30A |
| Current Limitation | Constant current, without disconnection, but temperature limited |
| Overvoltage Protection | Two stage, redundant and variable DC _{OUT} OVP 31.8V (via software) DC _{OUT} OVP 31.6V (hardware) |
| ENVIRONMENTAL CONDITIONS | |
| Ambient Temperature | -40°C to +70°C, according to EN 50155 |
| Relative Humidity | <75% average per year |
| Shock & Vibration | According to EN 50155 |
| EMC | According to EN 50121-3-2 |
| ISOLATION | |
| Input | 1500V |
| Output | 500V |
| Input to Output | 1500V |
| SIGNALS | |
| Temperature Sensor | Pt100, for battery temperature |
| Alarm Contact | System failure, over temperature, under & over voltage protection, battery sensor failure, potential free relay contact |
| Remote ON/OFF | Bridge between pins 4 & 5 [external relay] |
| Interface | RS-232 |
| MECHANICAL DATA | |
| Case Material | Stainless steel |
| Dimensions | 270 x 115 x 255mm (W x H x D) |
| Weight | Approx. 6.5kg |
| Classification | IP54 |
| Cooling | Convection via heat sink on wall side (cooling fins must run vertically for optimal air flow) |
| Connector Height | The extent of the connector plugs is 90mm + bending radius of the connecting cables |
| Grounding | An M6 x 25 ground bolt is provided on the case. A cable diameter of at least 4mm ² is recommended for the ground connection. The ground bolt is not connected to the -ve pole of this device. The input & output are isolated to chassis. |
| PROTECTION | |
| Input Undervoltage | 24VDC in :16V disconnect, 17V restart; 110VDC in 75V disconnect, 77V restart |
| Input Overvoltage | 24VDC in: 33V disconnect, 32V restart; 110VDC in: 145V disconnect, 143 restart |
| Output Undervoltage | 14V factory set, 10-35V adjustable |
| Output Overvoltage | 30.5V factory set, 10-35V adjustable |
| Current Limit | 30A factory set, 10-30A adjustable |
| Hardware DC _{OUT} Over. Protection | 31V factory set, not adjustable |
| Input and Signal Protection | Reverse connection and short-circuit protected |
| OTHER | |
| Input Current | 50A max and is limited by an input power threshold |
| Electrical Safety | EN 60950, VDE 0805 (Overload & Shortcircuit protected) |
| Warranty | 24 Months |

Every effort is made to ensure that the information provided within this technical summary is accurate. However, ETPS Ltd must reserve the right to make changes to the published specifications without prior notice. Where certain operating parameters are critical for your application we advise that they be confirmed at the time of order. ETPS Ltd specialises in modifying its proven platforms to suit your needs. Please contact our office if your requirement is non-standard. Please note that your actual unit may differ from those shown.



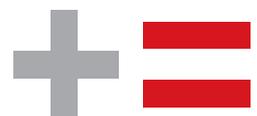
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WE ARE
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ETPS engineer electronic power supply and testing systems. Our problem solving skills provide the spark of innovation to some of the world's leading technology brands.



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